		Exploring Aerona	
		2006 21st Century	
West Virginia 21st Ce	ntury Science	Standards and Obj	ectives
Grade 5	Titury Science		
Activity/Lesson	State	Standards	
Addivity/Edddon	Otato	Otaridardo	realize that scientists formulate and test their
Fundamentals of		SCI.5.SC.O.5.1.	explanations of nature using observation and
Aeronautics (145-176)	WV	01	experiments.
101011000000000000000000000000000000000			use a variety of technologies and scientific
			instruments to conduct explorations,
Fundamentals of		SCI.5.SC.O.5.1.	investigations and experiments of the natural
Aeronautics (145-176)	WV	08	world.
,			utilize experimentation to demonstrate scientific
			processes and thinking skills (e.g., formulating
			questions, predicting, forming hypotheses,
Fundamentals of		SCI.5.SC.O.5.1.	quantifying, or identifying dependent and
Aeronautics (145-176)	WV	10	independent variables).
			construct and use charts, graphs and tables to
Fundamentals of		SCI.5.SC.O.5.1.	organize, display, interpret, analyze and explain
Aeronautics (145-176)	WV	11	data.
			investigate the properties of an electromagnet
			by selecting appropriate materials, designing
\4		SCI.5.SC.O.5.2.	
Wings(177-208)	WV	15	differences in design.
			investigate the properties of an electromagnet
Airmiana Cantral/200			by selecting appropriate materials, designing
Airplane Control(209-	wv	SCI.5.SC.O.5.2.	
256)	VVV	10	differences in design. realize that scientists formulate and test their
		SCI.5.SC.O.5.1.	explanations of nature using observation and
The Resource Center	WV	01	experiments.
THE RESOURCE SCRIET	V V	SCI.5.SC.O.5.1.	compare and contrast the historical significance
The Resource Center	WV	04	of scientific discoveries.
		SCI.5.SC.O.5.1.	compare and contrast the historical significance
Science of Flight	WV	04	of scientific discoveries.
			formulate conclusions through close
		SCI.5.SC.O.5.1.	observations, logical reasoning, objectivity,
Science of Flight	WV	06	perseverance and integrity in data collection.
			use a variety of technologies and scientific
			instruments to conduct explorations,
Intro to Aeronautics		SCI.5.SC.O.5.1.	investigations and experiments of the natural
(109-123)	WV	08	world.
			construct and use charts, graphs and tables to
Intro to Aeronautics		SCI.5.SC.O.5.1.	organize, display, interpret, analyze and explain
(109-123)	WV	11	data.
Intro to Aeronautics	100	SCI.5.SC.O.5.1.	use inferential reasoning to make logical
(109-123)	WV	12	conclusions from collected data.
Cojontific Mothed/101		901 E 90 0 E 4	realize that scientists formulate and test their
Scientific Method(124-	\\\\\	SCI.5.SC.O.5.1.	explanations of nature using observation and
144)	WV	01	experiments.

	1		and a substitution of the
O - i 4:6: - M - 4! 1/4 O 4		001500054	cooperate and collaborate to ask questions,
Scientific Method(124-	140.4		design and conduct investigations to find
144)	WV	05	answers and solve problems.
			formulate conclusions through close
Scientific Method(124-		1	observations, logical reasoning, objectivity,
144)	WV	06	perseverance and integrity in data collection.
		Exploring Aerona	
		2006 21st Century	
		Standards and Obj	ectives
West Virginia 21st Ce	ntury Science		
Grade 6			
Activity/Lesson	State	Standards	
			realize that scientists formulate and test their
Fundamentals of			explanations of nature using observation and
Aeronautics (145-176)	WV	01	experiments.
			utilize experimentation to demonstrate scientific
			processes and thinking skills (e.g., formulating
			questions, predicting, forming hypotheses,
Fundamentals of		SCI.6.SC.O.6.1.	quantifying, or identifying dependent and
Aeronautics (145-176)	WV	10	independent variables).
			use a variety of technologies and scientific
			instruments to conduct explorations,
Tools of		SCI.6.SC.O.6.1.	investigations and experiments of the natural
Aeronautics(257-326)	WV	08	world.
			correlate the relationship of mass to gravitational
			force (e.g., larger the mass the larger the
		SCI.6.SC.O.6.2.	gravitational force, or the closer the objects the
How an Airplane Flies	WV	20	stronger the force).
Tion arry in plants 1 ilos			compare and contrast the influence that a
			variation in scale will have on the way an object
			or system works. (e.g., cooling rates of different-
			sized containers of water, strength of different-
			sized constructions from the same material, or
The Tools of		SCI 6 SC O 6 3	flight characteristics of different-sized model
Aeronautics	WV	04	airplanes).
7 teroridatios		-	examine simple machines and the forces
The Activity Center	WV	21	involved.
The Activity Center			apply the effects of balanced and unbalanced
The Activity Center	WV	22	forces on motion of objects.
The Activity Center	VVV	SCI.6.SC.O.6.1.	
The Resource Center	WV	04	of scientific discoveries.
The Resource Center	VVV	04	
			compare and contrast the influence that a
			variation in scale will have on the way an object
			or system works. (e.g., cooling rates of different-
			sized containers of water, strength of different-
		001000000	sized constructions from the same material, or
T. D	140.7		flight characteristics of different-sized model
The Resource Center	WV	04	airplanes).
		0010000	realize that scientists formulate and test their
		SCI.6.SC.O.6.1.	explanations of nature using observation and
Science of Flight	WV	01	experiments.
		SCI.6.SC.O.6.1.	,
Science of Flight	WV	04	of scientific discoveries.

Scientific Method(124- 144)  Scientific Method(124- 144)  Scientific Method(124- 144)	WV WV	10 SCI.6.SC.O.6.1. 11	utilize experimentation to demonstrate scientific processes and thinking skills (e.g., formulating questions, predicting, forming hypotheses, quantifying, or identifying dependent and independent variables). construct and use charts, graphs and tables to organize, display, interpret, analyze and explain data.  use inferential reasoning to make logical conclusions from collected data.
		Exploring Aerona	autics
		2006 21st Century	
		Standards and Obj	
West Virginia 21st Ce	ntury Science		
Grade 7			
Activity/Lesson	State	Standards	
Fundamentals of Aeronautics (145-176)	wv	SCI.7.SC.O.7.1.	realize that scientists formulate and test their explanations of nature using observation and experiments.
Fundamentals of Aeronautics (145-176)	wv	SCI.7.SC.O.7.1.	world.
Fundamentals of Aeronautics (145-176)	wv	SCI.7.SC.O.7.1.	independent variables).
Fundamentals of Aeronautics (145-176)	wv	SCI.7.SC.O.7.1.	data.
Fundamentals of Aeronautics (145-176)	WV	24	perform experiments with simple machines to demonstrate the relationship between forces and distance; use vectors to represent motion.
Tools of			construct a variety of useful models of an object,
Aeronautics(257-326)	WV	02	event, or process.
Tools of Aeronautics(257-326)	WV	SCI.7.SC.O.7.3. 04	compare and contrast the influence that a variation in scale will have on the way an object or system works. (e.g., cooling rates of different-sized containers of water, strength of different-sized constructions from the same material, or flight characteristics of different-sized model airplanes).
How an Airplane Flies	WV	SCI.7.SC.O.7.2. 24	perform experiments with simple machines to demonstrate the relationship between forces and distance; use vectors to represent motion.

Fundamentals of Aeronautics (145-176)	WV	SCI.8.SC.O.8.1.	conduct and/or design investigations that incorporate the skills and attitudes and/or values of scientific inquiry (e.g., established research protocol, accurate record keeping, replication of results and peer review, objectivity, openness, skepticism, fairness, or creativity and logic).
Fundamentals of Aeronautics (145-176)	WV	SCI.8.SC.O.8.1.	historical observations and experimental evidence, accounting for variability in experimental results.
Activity/Lesson	State	Standards	formulate scientific explanations based on
Grade 8	04-4-	Otomolo ::-l-	
West Virginia 21st Ce	ntury Science		
		Standards and Obj	ectives
		006 21st Century	
		Exploring Aerona	
144)	WV	02	event, or process.
Scientific Method(124-	\\\\\\	SCI.7.SC.O.7.3.	, , ,
144)	WV	24	and distance; use vectors to represent motion.
Scientific Method(124-	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	SCI.7.SC.O.7.2.	•
144)	wv	12	conclusions from collected data.
Scientific Method(124- 144) Scientific Method(124-	WV	SCI.7.SC.O.7.1. 11 SCI.7.SC.O.7.1.	data.
,	VVV		construct and use charts, graphs and tables to
Scientific Method(124-144)	WV	SCI.7.SC.O.7.1.	utilize experimentation to demonstrate scientific processes and thinking skills (e.g., formulating questions, predicting, forming hypotheses, quantifying, or identifying dependent and independent variables).
Scientific Method(124-144)	wv	SCI.7.SC.O.7.1.	experiments.
Intro to Aeronautics (109-123)	WV	SCI.7.SC.O.7.3.	event, or process.
Intro to Aeronautics (109-123)	wv	SCI.7.SC.O.7.2.	and distance; use vectors to represent motion.
Intro to Aeronautics (109-123)	wv	SCI.7.SC.O.7.1.	formulate conclusions through close observations, logical reasoning, objectivity, perseverance and integrity in data collection.
Intro to Aeronautics (109-123)	wv	SCI.7.SC.O.7.1. 04	compare and contrast the historical significance of scientific discoveries.
How an Airplane Flies	wv	SCI.7.SC.O.7.3.	variation in scale will have on the way an object or system works. (e.g., cooling rates of different-sized containers of water, strength of different-sized constructions from the same material, or flight characteristics of different-sized model airplanes).
			compare and contrast the influence that a

			use appropriate technology solutions within a problem solving setting to measure and collect
			data; interpret data; analyze and/or report data;
Fundamentals of		SCI.8.SC.O.8.1.	interact with simulations; conduct research; and
Aeronautics (145-176)	WV	06	present and communicate conclusions.
			design, conduct, evaluate and revise
			experiments (e.g., compose a question to be
			investigated, design a controlled investigation
			that produces numeric data, evaluate the data in
			the context of scientific laws and principles,
			construct a conclusion based on findings,
			propose revisions to investigations based on
			manipulation of variables and/or analysis of
Fundamentals of		SCI.8.SC.O.8.1.	error, or communicate and defend the results
Aeronautics (145-176)	WV	07	and conclusions).
			draw conclusions from a variety of data sources
			to analyze and interpret systems and models
			(e.g., use graphs and equations to measure and
			apply variables such as rate and scale, evaluate
			changes in trends and cycles, predict the
Fundamentals of		SCI.8.SC.O.8.1.	influence of external variances such as potential
Aeronautics (145-176)	WV	08	sources of error, or interpret maps).
			quantitatively represent work, power, pressure
			(e.g., Work=Force x distance,
Fundamentals of		SCI.8.SC.O.8.2.	· · ·
Aeronautics (145-176)	WV	22	collected data.
_ , , , ,			describe Newton's Laws of Motion; identify
Fundamentals of	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	SCI.8.SC.O.8.2.	examples, illustrate qualitatively and
Aeronautics (145-176)	VVV	24	quantitatively drawing vector examples.
		SCI.8.SC.O.8.2.	describe Newton's Laws of Motion; identify
\\/ingg(177, 200\	WV	24	examples, illustrate qualitatively and
Wings(177-208)	VVV	24	quantitatively drawing vector examples. describe Newton's Laws of Motion; identify
Airplane Control(209-		SCI.8.SC.O.8.2.	examples, illustrate qualitatively and
256)	WV	24	quantitatively drawing vector examples.
230)	VVV	24	use appropriate technology solutions within a
			problem solving setting to measure and collect
			data; interpret data; analyze and/or report data;
		SCI.8.SC.O.8.1.	interact with simulations; conduct research; and
Science of Flight	WV	06	present and communicate conclusions.
ocience of Flight	VVV	00	design, conduct, evaluate and revise
			experiments (e.g., compose a question to be
			investigated, design a controlled investigation
			that produces numeric data, evaluate the data in
			the context of scientific laws and principles,
			construct a conclusion based on findings,
			propose revisions to investigations based on
			manipulation of variables and/or analysis of
		SCI.8.SC.O.8.1.	error, or communicate and defend the results
Science of Flight	WV	07	and conclusions).
	'	-	,

			draw canalysians from a variety of data assurant
			draw conclusions from a variety of data sources
			to analyze and interpret systems and models
			(e.g., use graphs and equations to measure and
			apply variables such as rate and scale, evaluate
			changes in trends and cycles, predict the
		SCI.8.SC.O.8.1.	
Science of Flight	WV	08	sources of error, or interpret maps).
			formulate scientific explanations based on
			historical observations and experimental
Intro to Aeronautics		SCI.8.SC.O.8.1.	evidence, accounting for variability in
(109-123)	WV	01	experimental results.
			conduct and/or design investigations that
			incorporate the skills and attitudes and/or values
			of scientific inquiry (e.g., established research
			protocol, accurate record keeping, replication of
Intro to Aeronautics		SCI.8.SC.O.8.1.	
(109-123)	WV	04	skepticism, fairness, or creativity and logic).
(100 120)			use appropriate technology solutions within a
			problem solving setting to measure and collect
			data; interpret data; analyze and/or report data;
Intro to Aeronautics		SCI.8.SC.O.8.1.	
	WV	06	present and communicate conclusions.
(109-123)	VVV	00	
			design, conduct, evaluate and revise
			experiments (e.g., compose a question to be
			investigated, design a controlled investigation
			that produces numeric data, evaluate the data in
			the context of scientific laws and principles,
			construct a conclusion based on findings,
			propose revisions to investigations based on
			manipulation of variables and/or analysis of
Intro to Aeronautics		SCI.8.SC.O.8.1.	,
(109-123)	WV	07	and conclusions).
			draw conclusions from a variety of data sources
			to analyze and interpret systems and models
			(e.g., use graphs and equations to measure and
			apply variables such as rate and scale, evaluate
			changes in trends and cycles, predict the
Intro to Aeronautics		SCI.8.SC.O.8.1.	influence of external variances such as potential
(109-123)	WV	08	sources of error, or interpret maps).
,			quantitatively represent work, power, pressure
			(e.g., Work=Force x distance,
Intro to Aeronautics		SCI.8.SC.O.8.2.	1, 0
(109-123)	WV	22	collected data.
,			describe Newton's Laws of Motion; identify
Intro to Aeronautics		SCI.8.SC.O.8.2.	examples, illustrate qualitatively and
(109-123)	WV	24	quantitatively drawing vector examples.
(100-120)	V V V	<u></u>	formulate scientific explanations based on
			historical observations and experimental
Scientific Mathod/124		SCI.8.SC.O.8.1.	
Scientific Method(124-			1
144)	WV	01	experimental results.

Scientific Method(124-144)	wv	SCI.8.SC.O.8.1.	demonstrate how a testable methodology is employed to seek solutions for personal and societal issues. (e.g., "scientific method").
Scientific Method(124-144)	wv	SCI.8.SC.O.8.1.	conduct and/or design investigations that incorporate the skills and attitudes and/or values of scientific inquiry (e.g., established research protocol, accurate record keeping, replication of results and peer review, objectivity, openness, skepticism, fairness, or creativity and logic).
Scientific Method(124-144)	WV	SCI.8.SC.O.8.1. 06	use appropriate technology solutions within a problem solving setting to measure and collect data; interpret data; analyze and/or report data; interact with simulations; conduct research; and present and communicate conclusions.
Scientific Method(124-144)	WV	SCI.8.SC.O.8.1.	design, conduct, evaluate and revise experiments (e.g., compose a question to be investigated, design a controlled investigation that produces numeric data, evaluate the data in the context of scientific laws and principles, construct a conclusion based on findings, propose revisions to investigations based on manipulation of variables and/or analysis of error, or communicate and defend the results and conclusions).
Scientific Method(124-144)	WV	SCI.8.SC.O.8.2.	research and draw conclusions related to the quality and quantity of surface and ground water.
Scientific Method(124-144)	WV		communicate experimental designs, results and conclusions using advanced technology tools.